

ELECTRICAL & ELECTRONIC ENGINEERING

DEEE – S99

The Power to Fuel the Future

Dive into a diverse range of engineering subjects with the Diploma in Electrical & Electronic Engineering (DEEE) and develop versatile, industry-ready skillsets. With a prestigious history of over 65 years and over 20,000 successful graduates, we have a track record of producing successful engineers that are highly sought-after in the field.

WHAT YOU CAN EXPECT

- Choose one of seven specialisations:
 - Biomedical
 - Communication
 - Microelectronics
 - Power
 - Rapid Transit Technology
 - Robotics & Control
 - Sustainable Energy (NEW!)
- Join the **SP-NUS** Accelerated Pathway Programme or **SP-SUTD** Accelerated Pathway Programme to get a head start in university life.
- Pursue your passion through electives that can lead to a **Minor** or **Certificate**, such as Minor in **5G** & Artificial Intelligence of Things (**AIoT**), and Certificate in **IoT**.
- Experience an augmented learning environment in rail engineering with our latest integrated Rail System Simulator, a first among the polytechnics.
- Gain exposure through **Overseas Immersion Programmes** in various countries, such as Japan.
- Immerse in a **22-week internship** with opportunities at reputable companies such as SP Group, SMRT, A*STAR, PSA, Siemens, ST Electronics and CleanTech Solar.



SCHOLARSHIPS

- A*STAR Science Award (Polytechnic)
- DSO Diploma Scholarship
- DSTA Polytechnic Digital/Engineering Scholarship
- Micron Scholarship
- PSA Scholarship
- PSC Scholarship
- SG-Rail Scholarship
- Singtel SHINE Cadet Programme
- SP Engineering Scholarship

CAREER OPTIONS

- Assistant Electrical/Electronics Engineer
- Assistant Quality/Process/Project/Test Engineer
- Assistant Facilities Management Engineer
- Assistant Field Service Engineer
- Assistant Instrumentation Engineer
- Assistant Maintenance Engineer
- Biomedical Equipment Service Engineer
- Solar (PV) Technologist
- Technical Officer

FURTHER STUDIES

You can gain **direct entry into the second year or equivalent** to pursue an EEE-related degree in local universities, such as NUS, NTU, SUTD, and SIT. You can gain an **advanced standing of up to two years** in overseas universities, such as University of New South Wales (Australia), Imperial College London (UK), and University of Auckland (New Zealand).

ENTRY REQUIREMENTS

Range of Net 2023 JAE ELR2B2: 5 – 17

Aggregate Type: ELR2B2-C

SUBJECT	GRADE
English Language	1 – 7
Mathematics (Elementary/Additional)	1 – 6
Any one of the following subjects:	1 – 6
<ul style="list-style-type: none"> • Biology • Biotechnology • Chemistry • Computing/Computer Studies • Design & Technology • Electronics/Fundamentals of Electronics • Physics • Science (Chemistry, Biology) • Science (Physics, Biology) • Science (Physics, Chemistry) 	



As a DSO Diploma Scholar, I interned for four and a half months at DSO National Laboratories. I was assigned to work on wireless communication projects although I had no background in that field. With the guidance of my supervisor, I was able to learn the necessary concepts quickly and successfully delivered two new capabilities to my DSO team. I enjoyed the research work there because it was full of challenges and surprises, and every day was different. I also enjoyed the friendly and collaborative working environment at DSO, where each individual's contributions are valued. This internship was an eye opener to the world of defence research, and the experience has affirmed my desire to pursue a career in defence technology.

Lee Jing Yang Gabriel

DEEE Gold Medallist
Lee Kuan Yew Award Recipient
SP Excellence Award Recipient
Internship at DSO National Laboratories

Diploma in Electrical & Electronic Engineering	
1 ST YEAR	Common First-Year Modules (Domain, Math, and Common Core)
2 ND YEAR	DEEE Core Modules + Electives
3 RD YEAR	DEEE 3rd Year Specialisations (Choose 1 specialisation) <div> </div> <div>+</div> 22-week Internship & Electives

Applicants who have colour vision deficiency, and wish to pursue a career in electrical power engineering or as a Licensed Electrical Worker (LEW), may encounter difficulties meeting the course requirements and expectations. This condition is required by the Energy Market Authority (EMA) of Singapore. In addition, applicants should not be suffering from severe vision deficiency, acute hearing impairment or uncontrolled epilepsy. Interested applicants with any of these conditions are advised to contact Singapore Polytechnic for more information.



WHAT YOU'LL STUDY

The Diploma in Electrical & Electronic Engineering is a three-year full-time programme.



FIRST YEAR

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|--|--|---|
| <ul style="list-style-type: none">• Basic Mathematics• Common Core Modules• Computer Aided-Design & Drafting• Digital Electronics 1 | <ul style="list-style-type: none">• Digital Electronics 2• Engineering Mathematics I• Introduction to Engineering & Design• Introduction to Engineering Programming | <ul style="list-style-type: none">• Network Fundamentals• Principles of Electrical and Electronic Engineering I• Principles of Electrical and Electronic Engineering II |
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SECOND YEAR

- | | | |
|--|---|--|
| <ul style="list-style-type: none">• Common Core Modules• Circuit Theory & Analysis• Digital System Design• Elective 1 | <ul style="list-style-type: none">• Elective 2• Electrical Installation Design• Engineering Mathematics II• Microcontroller Applications | <ul style="list-style-type: none">• Physics for Engineers• PLC Applications• Statistics and Analytics for Engineers• Wafer Fabrication Fundamentals |
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THIRD YEAR

- | | | |
|--|---|---|
| <ul style="list-style-type: none">• Common Core Modules• Elective 3 | <ul style="list-style-type: none">• Elective 4 (Option)• Elective 5 (Option) | <ul style="list-style-type: none">• Year-3 Specialisation Modules 1-4• 22-Week Internship Programme/ Internship Equivalent |
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From Year 3, students are allowed to specialise in the area of their particular interest. They can choose from the following specialisations:

+ Biomedical

- Anatomy & Physiology
- Biomedical Equipment & Practices
- Biomedical Instrumentation Design & Applications
- Robotics Technology

+ Microelectronics

- Advanced Wafer Fabrication Technology
- IC Design
- IC Testing
- Quality & Reliability

+ Sustainable Energy (NEW!)

- Electric Vehicle Technology
- Hydrogen, Fuel Cell Technology & Energy Storage

+ Rapid Transit Technology

- Principles of Communication
- Rapid Transit Signalling System
- Rapid Transit System
- Smart Sensors & Actuators

+ Communication

- Digital Signal Processing
- Principles of Communication
- Satellite & Optical Communication
- Wireless Technology Applications

- Photovoltaic System Design

- Smart Grid & Building Energy Management

+ Power

- Power Electronics & Drives
- Power System Analysis
- Power Transmission & Distribution
- Smart Grid & Energy Storage

+ Robotics & Control

- Digital Manufacturing Technology
- Robotics Technology
- Smart Sensors & Actuators
- Systems & Control

ELECTIVES

The SP elective framework offers students options to pursue their passion and / or meet different career needs, and is an integral part of the holistic education we seek to provide to our students. The learning experiences of this elective framework help students in their development as self-directed, versatile, life-long learners, which are essential in today's volatile and changing societal as well as occupational landscape.

Students who are interested to explore additional new skills and abilities will have the opportunity to take up to five electives. Certificates and minors will be awarded when students complete a suite of related elective modules.

Please visit <https://www.sp.edu.sg/sp/education/elective-modules> for details of this elective scheme and the full list of electives.

COMMON CORE CURRICULUM

The Common Core Curriculum is designed to prepare students for a disruptive world that is ever-changing. Comprising critical human and emerging digital skills, the common core modules offer students an integral and inter-disciplinary learning experience to address the wicked problems of the world (framed by the United Nations' Sustainable Development Goals).

Through the Common Core modules, students will think critically about real-world problems, empathise with local and global communities and be challenged to effect change. For more information on the Common Core Curriculum, please visit <https://www.sp.edu.sg/sp/education/common-core-curriculum>.

All full-time diploma students are required to take a compulsory Education and Career Guidance module in SP. Students will take Education and Career Guidance – Personal Development (30 hours) in their first year.

All students are required to take one compulsory Wellness for Life (WFL) module for one semester in their first year in SP. In their second and third year, students may sign up for WFL module as an optional module.

